Office of the Surgeon General

Teleconsultation Program

For

Deployed Healthcare Professionals

Chuck Lappan
LTC (Retired)

11 April 2012

SRMC Project Manager, Teledermatology Program

OTSG Consult Manager, AKO Teleconsultation Program

Images

Referring Physician Narration

Originally Sent to Dermatology
Redirected to Burn-Trauma (AISR)

I am writing to seek assistance regarding a case of an XXX Army Soldier. I have found most of these men do not know how old they are.

20 something y/o male ambulated into BAS requesting medication for intermittent lesions on his scalp. He stated as a small child, he fell into a fire where the food is cooked in his village. He sustained burns to the scalp and notes that when it becomes "hot outside", that he develops lesions and they disappear when the weather is cold. The present lesions he notes started "recently". He has pain when he attempts to wear a helmet (no padding inside) and finds it more comfortable to wear a beret or soft cap. He admits to frequently not wearing a head cover.

Gen: Well appearing, alert, makes eye contact.
Skin: Scalp: hair missing, thin scar tissue noted to scalp. The skin is nonmobile. Two lesions noted. The first is right of midline with skin splitting, irregular shape measuring approx 4x5 cm. The second lesion is left of midline and closer to the parietal-occipital region. It is a raised multi-colored lesion approx 2x2 cm. No surrounding erythema noted suggesting there is not a current sunburn or infectious process.

A: suspicious lesions

P. I provided bacitracin ointment for the irregular split-skin lesion right of midline. I have requested for the interim for him to pad his helmet with scarf/schamog and I have requested supply order the old ballistic helmet pads. I educated to purchase sunscreen at the nearby bazaar. I am concerned that this may be developing into a malignant tumor. I am at a remote FOB and unable to obtain a skin biopsy. Please review the attached photos to assist in diagnosis and treatment.

Dx/DDx: Squamous
Cell Carcinoma

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1ˢᵗ AISR Consultant's Recommendation

Your suspicions are warranted. The crux of your consult is your "concerned that this may be developing into a malignant tumor. I am at a remote FOB and unable to obtain a skin biopsy."

When we see ulcerative lesions in our burn patients, we are forced to consider Marjolin's ulcer, a term given to aggressive epidermoid tumors that arise from areas of chronic injury, with old burn wounds being a common site.

BLUF: patient requires a biopsy to either confirm or disprove your suspicion. If it is positive, he will need excision and closure, likely with a graft.

Recommendation: work to send him to the nearest CSH or similar level facility where he can obtain definitive treatment.

2ⁿᵈ AISR Consultant's Recommendation

My thought like Dr. XX is he has SCC arising in a chronic burn wound (Marjolin's ulcer).

I agree with Dr. XX that he should go to a CSH for biopsy and further treatment. This would be a life-threatening problem for him.

Looking at the healed burn, it is permanently dipigmented, and sunscreen is a good idea but he would need to do it for the rest of his life. Therefore I would tell him to always wear a beret, or other such headgear, whenever outside.

Teleconsultation Redirected to In-Country Dermatology Consultant

Dermatologist's Recommendation

 I agree with both Drs. XX and YY; a squamous cell carcinoma would certainly have to be ruled out in this gentleman.
I would recommend a biopsy of both of the larger crusted/eroded plaques for histologic confirmation of the diagnosis, and presuming the results confirm a SCC, the resultant excision this gentleman would have would be reasonable in size and complex to close--the case is complicated by the multifocal nature of involvement, likely lack of skin laxity in the area and size of lesions. As noted by Dr. XX, closure would almost certainly require graft placement.

Your closest CSH would be your best bet for biopsy; note that all tissue specimens in the AOR are sent to LRMC for review (including those biopsies performed at NN), so anticipate a 1-2 week turnaround on initial histology results.

Pending results, it might be worth discussing the case with the general surgeon on staff at your local CSH to garner input.

Referring Physician Follow Up

I thank all of you for your assistance. This consult service is very helpful!

Consult Number: 0005120403
Classification: Burn and Cancer

x/DDx: Squamous
ell Carcinoma

Problem

- Deployed Healthcare providers deployed did not have a standardized
  methodology to receive expert teleconsultation services

- Providers contacted colleagues at their home station

- Reserve Component providers contacted colleagues at civilian facilities

- Providers unnecessarily evacuated patients they could have treated at
  their location with expert consultative assistance

Objective

Develop a user-friendly enterprise teleconsultation
system to support deployed medical personnel

Solution

- Army Knowledge Online (AKO) Email in Support of Electronic Medical Consultation by Deployed Providers

  ➢ OTSG/MEDCOM Policy Memo 09 - 034 dated 4 June 2009

  ✓ Policy is under revision

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- Functional Proponent: OTSG Medical Informatics Consultant

- Selected specialties organized with email utility groups

- Specialty Medical Consultants supervise their respective teleconsultation service, ensure the scheduling and availability of medical staff with consultants from all branches

- Program oversight by a Consult Manager

  ➢ Manages requests for specialties not organized by utility group

  ➢ Evaluates specialties for development into utility groups

ides mor   the Funct   onent

Psoriasi
s

Vitilig
o

Inclusion
Cyst

Epidermal

- **Not available to**

  ➢ **Providers in CONUS**

  ➢ **OCONUS fixed – based facilities**

  ➢ **Individual patients and their families**

Lichen Planus

- **No restrictions on patient branch of service or nationality**

  ➢ **If the patient comes to your clinic and you need assistance send the consult**

  ➢ **Available to MEDCAP patients**

- **Consults are answered every day of the week including weekends and holidays**

- **Consult Manager receives all teleconsultations and serves as the gatekeeper**

Mallet Fracture

Skin Tag

- **Program Advantages**

  ➤ **Ease of operation**

    ✓ **NIPRNET ... Store – and – Forward**

  ➤ **Rapid response ... many answered within 5 hours**

- **Program Advantages**

  ➤ **Obtain a diagnosis, treatment options,**
    how – to / what – if

- **Depending on the tactical situation may be**
  the safest way to obtain medical advice

- **On – line collaboration between specialties**

Photo-Contact Dermatitis

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AKO Summary Teleconsultations
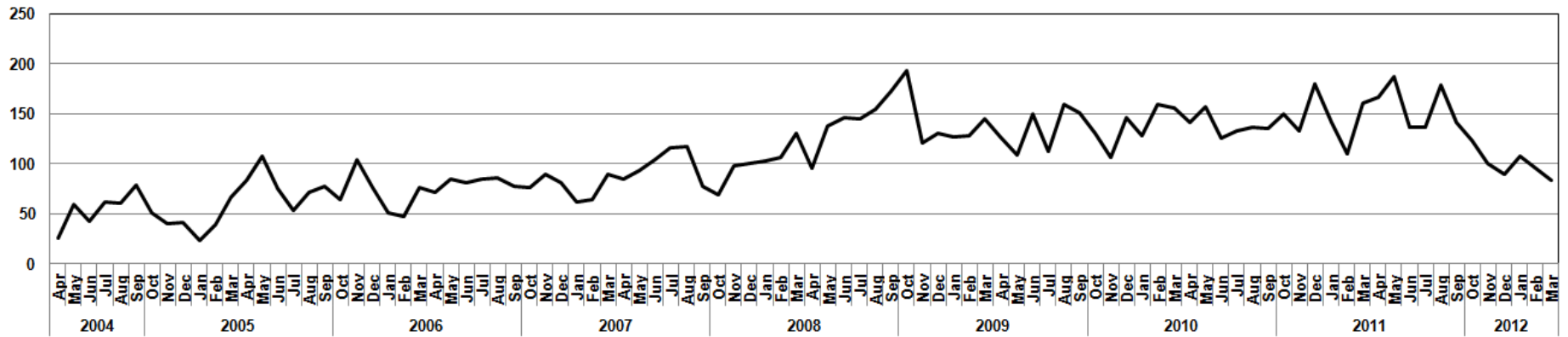
Speciality	Month	Year
Dermatology	Apr	2004
Ophthalmology	Jul	2004
Nephrology	Apr	2005
Burn-Trauma	Jan	2005
Infectious Diseases	Jan	2005
Pediatrics	May	2005
Cardiology	Sep	2005
Rehabilitation	Apr	2006
Toxicology	Jan	2006
Prvt Med	Jul	2006
Rheumatology	May	2006
Internal Medicine	Nov	2006
Neurology	Oct	2006
Orthopedics	Jul	2007
Urology	Jul	2007
Traumatic Brain Injury	Mar	2008
Infection Control	Sep	2008
Microbiology	Sep	2008

Highest Volume Months

Program: Oct 08: 184
Afghanistan: May 11: 98
Bosnia: Sep 04: 15
Egypt: Feb 11: 10
Iraq: Oct 08: 134
Kuwait: Sep 09: 18
Kyrgyzstan: Jul 10: 7
Qatar: Aug 11: 13
Navy: Mar 11: 31

Year	Average Reply Time	Median Reply Time
2004	5 hr 9 min	3 hr 55 min
2005	5 hr 16 min	3 hr 32 min
2006	5 hr 12 min	3 hr 30 min
2007	5 hr 8 min	3 hr 4 min
2008	4 hr 58 min	3 hr 11 min
2009	5 hr 11 min	3 hr 10 min
2010	5 hr 13 min	3 hr 23 min
2011	5 hr 12 min	3 hr 22 min
2012	5 hr 31 min	2 hr 52 min
Program	5 hr 12 min	3 hr 19 min

Summary

- **Program Summary**

  ➢ **19 specialties with contact groups: xxx.consult@us.army.mil**

  ➢ **10,201 teleconsultations (Apr 04 to Mar 12 – 96 months)**

  ➢ **133 known evacuations prevented**

  ➢ **467 known evacuations facilitated following consultant's recommend**

  ➢ **2,499 different referring health care professionals**

  ➢ **1,163 teleconsultations on non - US patients**

  ➢ **Average Reply Time 5 hr 12 min**

Year	Reply Time
2004	5 hr 9 min
2005	5 hr 16 min
2006	5 hr 12 min
2007	5 hr 8 min
2008	4 hr 58 min
2009	5 hr 11 min
2010	5 hr 13 min
2011	5 hr 12 min
2012	5 hr 31 min
Mar 12	4 hr 28 min
Program	5 hr 12 min

Non-U.S. Patients			
Country	Consults	Country	Consults
Afghanistan Army	58	India Army / Police	1
Afghanistan Detainee	12	India Contactor	23
Afghanistan Non-Combatant	357	Iraqi Military	48
Australian Army	5	Iraqi Civilian	309
Australian Navy	2	Iraqi Detainee	86
Bangladesh Contractor	1	Italian Navy	2
Bosnian National	3	Jordanian Contractor	1
Bosnian Contractor	4	Jordanian Soldier	1
Bosnian Officer	1	Kenya National	7
Botswana Child	1	Korean	6
British Air Force	3	Kyrgyzstan Contractor	1
British Contractor	2	Laotian National	3
British Soldier	2	Liberian Children	2
Bulgarian Army	3	Macedonian Soldier	5
Canadian Contractor	1	Mauritania National	1
Canadian Soldier	25	Mongolian National	1
Canadian Navy	8	Nepalese Contractor	8
Columbia National	6	Netherland Army	1
Congo Child	1	New Zealand Contractor	1
Denmark Contractor	1	Pakistan	30
Djibouti National	3	Philippine National	22
Dutch Army	4	Poland Army	3
Egyptian Contractor	1	Romanian Contractor	1
Ethiopian National	3	Romanian Soldier	13
Fijian Contractor	5	Russian AFEES Contractor	1
Georgia Contractor	1	Saudi Detainee	1
German Child (in Turkey)	1	Scottish Civilian	2
German Contractor	1	SE Asian (not specified)	1
Ghana National	5	Sierra Leon Contractor	1
Guatemala Child	1	Somalia Child	1
Guam Contractor	1	South Africa Contractor	3
Haitian National	2	Sri Lanka Contractor	2
Honduran National	1	Turkey Contractor	3
Hungarian Army / Police	12	Uganda National	33
Hungarian Contractor	1	Uruguay Contractor	1
Total			1,163

Reply Times Summary

Reply Time Percentages

98.4% of all teleconsultations were answered in 24 hours or less
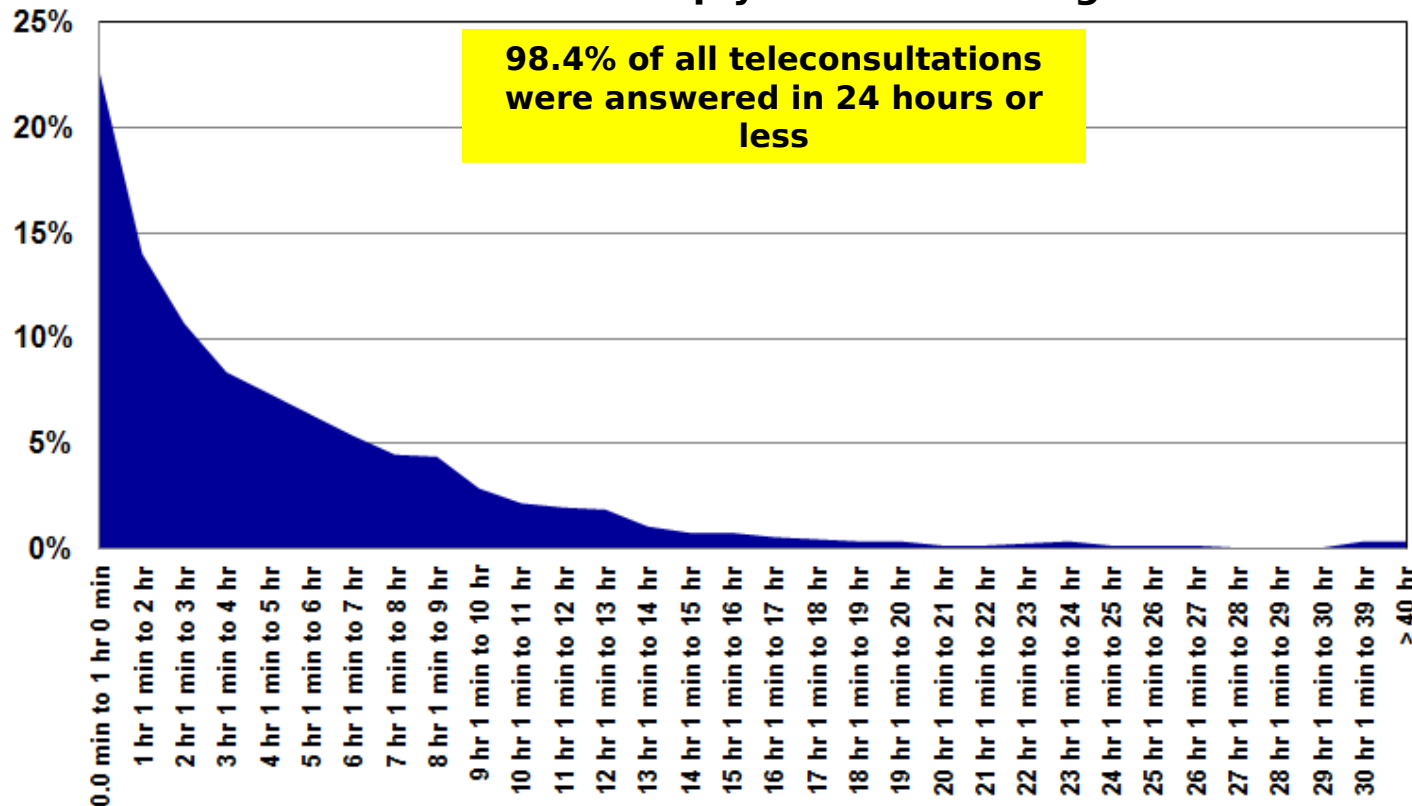
15 min or less	5.7%
16 to 30 min	6.5%
31 to 45 min	5.8%
46 to 60 min	4.8%
Total ≤ 60 min	22.8%

Time	%
0.0 min to 1 hr 0 min	22.50%
1 hr 1 min to 2 hr	14.00%
2 hr 1 min to 3 hr	10.70%
3 hr 1 min to 4 hr	8.40%
4 hr 1 min to 5 hr	7.40%
5 hr 1 min to 6 hr	6.40%
6 hr 1 min to 7 hr	5.40%
7 hr 1 min to 8 hr	4.50%
8 hr 1 min to 9 hr	4.40%
9 hr 1 min to 10 hr	2.90%
10 hr 1 min to 11 hr	2.20%
11 hr 1 min to 12 hr	2.00%
12 hr 1 min to 13 hr	1.90%
13 hr 1 min to 14 hr	1.10%
14 hr 1 min to 15 hr	0.80%
15 hr 1 min to 16 hr	0.80%
16 hr 1 min to 17 hr	0.60%
17 hr 1 min to 18 hr	0.50%
18 hr 1 min to 19 hr	0.40%
19 hr 1 min to 20 hr	0.40%
20 hr 1 min to 21 hr	0.20%
21 hr 1 min to 22 hr	0.20%
22 hr 1 min to 23 hr	0.30%
23 hr 1 min to 24 hr	0.40%
24 hr 1 min to 25 hr	0.20%
25 hr 1 min to 26 hr	0.20%
26 hr 1 min to 27 hr	0.20%
27 hr 1 min to 28 hr	0.10%
28 hr 1 min to 29 hr	0.10%
29 hr 1 min to 30 hr	0.10%
30 hr 1 min to 39 hr	0.40%
> 40 hr	0.40%

Program Summary

- **Specialties with utility groups**

  - ➤ **Burn-trauma: burntrauma.consult@us.army.mil**
  - ➤ **Cardiology: cards.consult@us.army.mil**
  - ➤ **Dermatology: derm.consult@us.army.mil**
  - ➤ **Dental: dental.consult@us.army.mil + 7 sub-groups**
  - ➤ **Infectious Diseases: id.consult@us.army.mil (linked to Prev Med)**
  - ➤ **Infection Control: infect.cntrol.consult@us.army.mil**
  - ➤ **Internal Medicine: im.consult@us.army.mil**
  - ➤ **Microbiology / Laboratory: microbiology.consult@us.army.mil**
  - ➤ **Nephrology: nephrology.consult@us.army.mil**
  - ➤ **Neurology: neuron.consult@us.army.mil**
  - ➤ **Ophthalmology / Optometry: [ey_____army.mil](mailto:army.mil)**

Tinea Capitis

Folliculitis

Program Summary

- ➢ **Orthopedics / Podiatry: ortho.consult@us.army.mil**
- ➢ **Pediatrics Intensive Care: picu.consult@us.army.mil**
- ➢ **Preventive Medicine: pmom.consult@us.army.mil**
- ➢ **Rheumatology: rheum.consult@us.army.mil**
- ➢ **Toxicology: toxicology.consult@us.army.mil**
- ➢ **Traumatic Brain Injury: tbi.consult@us.army.mil**
- ➢ **Sleep Medicine: sleep.e.consult@us.army.mil**
- ➢ **Urology: urology.consult@us.army.mil**

- **Other Specialties "as requested"**

- ➢ Allergy
- ➢ Endocrinology
- ➢ ENT
- ➢ Flight Medicine
- ➢ Gastroenterology
- ➢ General Surgery

- ➢ Hematology
- ➢ Legal
- ➢ Neurosurgery
- ➢ OB-GYN
- ➢ Oncology
- ➢ Pharmacy

- ➢ **Plastic Surgery**
- ➢ **Psychiatry**
- ➢ **Radiology**
- ➢ **Speech Pathology**
- ➢ **Vascular Surgery**
- ➢ **Vaccine Centers**

- **Contact Consult Manager for assistance: help.consult@amedd.army.mil**

HSV

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AKO Teleconsultation Program Business Practice For Deployed Providers

Provider sends f/u or questions/info to group

Deployed Provider emails consultation

Specialty with Contact Group

Yes   **No**

Include **help.consult@amedd.army.mil** *in the "cc" address*

Consultant emails recommendation to the deployed physician

-----Original Message-----
From: ZZZZZZ, XXXXX MAJ
Sent: Monday, May 28, 2007 10:00 PM
To: XXXXXXX
Subject: RE: Teleconsultation

COL XXXXX

The lesion appears to be a prurigo nodule. They occur from repeated scratching rubbing. Many times it is formed from habit alone, but also they can occur from a primary lesion (such as a wart, insect bite, other). You have many treatment options. You can try a trial of cryotherapy (5 second freeze), shaving the lesion off, intralesional kenalog, topical steroids are among the most common forms of treatment. The main goal is to get the patient to leave the lesion alone. Thank you for the consult.

Respectfully,

XXXXXX XXXXXX MD
MAJ, MC, USA
Chief, Dermatology
XXXXXXX

-----Original Message-----
From: XXXX XXXXXXX
Sent: Tuesday, May 29, 2007 2:31 AM
To: 'derm.consult@us.army.mil'
Subject: Teleconsultation

In any care, the attached images are of a 47 y/o healthy male with a recurring (several months) 4 mm scar on posterior wrist, ulnar aspect.

Patient kept scratching it and when saw primary provider stateside (before deploying), provider said it was from the irritation and leaving it alone would make it go away.

Now after several months the lesion recurs (no worse than original, no spreading), patient continues to pick at it when the central core spreads to about 3 mm (since it itches).

No treatments were attempted, no labs obtained. There may or may not be cyro for freezing.

DDx: 1. Wart
     2. Scar that recurs due to patient irritation.

Thank you very much, in advance, for this great pr <<DSC05694.JPG>> ogram. It is nice to be in theater, knowing you do what you do.

Les

XXXXX XXXXXX
Col, USAF, MC

Consultant retrieves and reviews teleconsultation

Teleconsultation is routed to the appropriate Specialty

Teleconsultation emailed to Consult Manager

Finds consultant with appropriate expertise

Copy furnished to specialty group... confirms teleconsultation is answered and enables collaboration

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Locations Submitting Teleconsultations

STANDARD TIME ZONES OF THE WORLD

Map as of 1 April 2012

Supported Facility	Afghanistan	Congo	Honduras	Italy - Sicily	Mauritania	Senegal	Yemen
🟥	Albania	Chad	Germany	Japan	Morocco	Spain	US, Canadian & Australian Navy afloat
	Bahrain	Continental US	Ghana	Kenya	Nepal	Thailand	
	Bangladesh	Djibouti	Guam	Kuwait	Okinawa	Turkey	
	Belgium	Ecuador	Guatemala	Kyrgyzstan	Pakistan	Turkmenistan	
	Belize	Egypt – MFO Sinai	Guinea	Laos	Peru	Ukraine	
	Bosnia	El Salvador	Hurricane Katrina	Liberia	Philippines	United Arab Emirates	
	Botswana	Haiti Relief	Iraq	Mali	Qatar	United Kingdom	

Quick Summary

Top Specialties FY-12
xx.consult@us.army.mil

Dermatology: 30%
Orthopedics: 14%

Top "Other Specialties" FY-12

Otolaryngology
Gastroenterology

Top Patient Branch
Army: 51%
Navy: 18%

Top Locations FY-
Afghanistan: 45%
Navy Afloat: 17%

FY 12

Afghanistan % Consultations		
Oct	Nov	Dec
46%	43%	45%

Jan	Feb	Mar
43%	41%	52%

Navy % Consultations		
Oct	Nov	Dec
7%	7%	28%

Jan	Feb	Mar
24%	19%	20%

Wart

Evacuations Summary

Evacuations Prevented Following Teleconsultation		
Summary	Number	%
Audiology	1	1%
Burn Trauma	1	1%
Cardiology	10	8%
Dermatology	46	35%
Endocrinology	1	1%
Gastroenterolgy	2	2%
Hematology	1	1%
Infectious Diseases	3	2%
Internal Medicine	1	1%
Mental Health	1	1%
Nephrology	4	3%
Neurology	3	2%
Neurosurgery	2	2%
OB-GYN	2	2%
Oncology	1	1%
Ophthalmology	4	3%
Orthopedics	24	18%
Otolaryngology	7	5%
Radiology	1	1%
Rheumatology	4	3%
TBI	1	1%
Urology	13	10%
Total	133	

Based on some feedback from one deployed provider, this figure is probably under-stated.

Evacuations Facilitated Following Teleconsultation		
Summary	Number	%
Allergy	2	0.4%
Audiology	1	0.2%
Burntrauma	4	1%
Cardiology	46	10%
Dermatology	40	9%
Dental	2	0.4%
Endocrinology	16	3%
Gastroenterology	13	3%
General Surgery	3	0.6%
Gyncology	1	0.2%
Hematology	3	0.6%
Infectious Diseases	14	3%
Internal Medicine	25	5%
Nephrology	18	4%
Neurology	109	23%
Neurosurgery	2	0.4%
OB-GYN	2	0.4%
Oncology	1	0.2%
Ophthalomogy	20	4%
Orthopedics	65	14%
Otolarynology	10	2%
Preventive Medicine	1	0.2%
Pulmonary Diseases	4	1%
Rheumatology	21	4%
Sleep Medicine	1	0.2%
TBI	8	2%
Urology	34	7%
Vascular Surgery	1	0.2%
Grand Total	467	

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Detailed Summary - Specialties With Formal Groups

	Total Consults By FY									Program Totals	% Consults Program
	2004 Totals	2005 Totals	2006 Totals	2007 Totals	2008 Totals	2009 Totals	2010 Totals	2011 Totals	2012 Totals		
Burn-Trauma		23	24	19	32	31	13	17	4	163	2%
Cardiology		2	67	41	61	67	84	51	19	392	4%
Dental						14	15	21	3	53	0.5%
Dermatology	321	543	528	467	562	526	560	543	181	4,231	41%
Infection Control						11	11	16	3	41	0.4%
Infectious Diseases		82	110	106	100	110	110	100	44	762	7%
Internal Medicine				34	50	57	64	70	34	309	3%
Microbiology						8	7	3	1	19	0.2%
Nephrology		13	18	33	30	29	20	19	10	172	2%
Neurology				78	123	145	123	129	36	634	6.2%
Ophthalmology	10	51	38	54	70	65	56	81	25	450	4%
Orthopedics				11	105	169	142	227	82	736	7.2%
Pediatrics		8	21	27	24	20	15	7	2	124	1%
Prvt Med			3	13	13	25	26	25	11	116	1.1%
Rehabilitation			1						0	1	0.0%
Rheumatology			13	26	20	21	32	35	13	160	1.6%
Sleep Medicine						12	5	16	4	37	0.4%
Toxicology		2	19	15	14	8	14	15	6	93	0.9%
Traumatic Brain Injury					8	42	63	74	13	200	2.0%
Urology				6	69	108	114	125	40	462	4.5%
Other Specialties		7	61	124	178	185	180	245	66	1,046	10%
Totals	331	731	903	1,054	1,459	1,653	1,654	1,819	597	10,201	

Detailed Summary - Specialties Without Formal Groups

Specialty	2005 Totals	2006 Totals	2007 Totals	2008 Totals	2009 Totals	2010 Totals	2011 Totals	2012 Totals	Program Totals	% Consults Program
15-6 Investigation			1					0	1	0.1%
Admin/Awards				3	2	1	2	1	9	1%
Allergy	2	1	2	3	8	10	28	4	58	6%
Dental				1					1	0.1%
Diving				1				0	1	0.1%
Endocrinology	1	4	12	16	26	13	20	7	99	9.5%
Flight Medicine			1			5	1	2	9	0.9%
Gastroenterology		2	13	34	39	30	30	9	157	15.0%
General Surgery			2	3	7	3	4	0	19	2%
Hematology			4	7	15	19	11	4	60	6%
Judge Advocate General			2					0	2	0.2%
Line of Duty				1				0	1	0.1%
Medical Translation				1				0	1	0.1%
Neurology	1	10	1						12	1%
Neurosurgery		4	5	3	3	3	3	5	26	2%
Nutrition			1				1	0	2	0.2%
OB-GYN		2	14	25	16	17	19	5	98	9.4%
Oncology			3	6		4	3	0	16	2%
Oral Pathology	1	2	4	4					11	1%
Orthopedics		14	12						26	2%
Otolaryngology		2	16	28	45	50	76	15	232	22.2%
Pathology				1	1			0	2	0.2%
Pain Relief & Rehab							3	0	3	0.3%
Pharmacy			2	2			1	0	5	0%
Plastic Surgery		1	1		1	2		1	6	0.6%
Preventive Medicine	1	1							2	0.2%
Psychiatry / Mental Health			1	6	5	8	15	0	36	3.4%
Pulmonary Diseases	1	1	4	16	8	7	13	4	54	5.2%
Radiology		2	3	13	7	3	10	2	44	4.2%
Speech Pathology		1					1	0	2	0.2%
Surgery					1	1	1	0	3	0.3%
Traumatic Brain Injury			2	1				0	3	0.3%
Urology		13	16					0	28	2.7%
Vascular Surgery		1	3	2	1	3	3	1	15	1.4%
Veterinary Medicine						1	1	0	2	0.2%
Total	7	61	125	178	185	180	245	60	1,046	

Detailed Summary – Deployed Provider's Location

	Location of Referring Physician										
	2004 Totals	2005 Totals	2006 Totals	2007 Totals	2008 Totals	2009 Totals	2010 Totals	2011 Totals	2012 Totals	Program Totals	% Consults Program
Major Facilities >100 Consults	286	682	827	1,008	1,378	1,586	1,570	1,745	545	9,627	94%
Afghanistan	6	80	127	131	160	346	610	744	267	2,471	24%
CONUS		20	17	19	26	16	37	29	16	180	2%
Djibouti				18	20	46	10	49	40	183	2%
Egypt (MFO)	1	22	16	11	3	26	14	67	11	171	2%
Iraq	197	477	570	755	1,059	905	621	509	45	5,138	50%
Kuwait	64	52	32	20	15	62	65	99	50	459	4%
Qatar	2	27	37	32	46	18	37	68	14	281	3%
US Navy Afloat	16	4	28	22	49	167	176	180	102	744	7%

Blister Beetle Reaction

	Location of Referring Physician										
	2004 Totals	2005 Totals	2006 Totals	2007 Totals	2008 Totals	2009 Totals	2010 Totals	2011 Totals	2012 Totals	Program Totals	% Consults Program
Minor Facilities <100 Consults	45	49	76	46	81	67	84	74	52	574	5.6%
Albania		1	1						0	2	0.0%
Bahrain					8	4	5		0	17	0.2%
Bangladesh								1	1	2	0.0%
Belgium								1	0	1	0.0%
Belize					2		1		0	3	0.0%
Bosnia	25	22	5	2			3	9	2	68	0.7%
Botswana					1				0	1	0.0%
Canada Navy Afloat								6	2	8	0.1%
Chad		1		1					0	2	0.0%
Congo						4			0	4	0.0%
Cuba (GTMO)			1			1			5	7	0.1%
Diego Garcia			2	1	3				0	6	0.1%
Ecuador				11					0	11	0.1%
El Salvador								2	0	2	0.0%
Germany		9	6	2	1	3	1	1	0	23	0.2%
Ghana					2	1		2	0	5	0.0%
Guam						1	3		0	4	0.0%
Guatemala					1				0	1	0.0%
Guinea						1			0	1	0.0%
Haiti							4		0	4	0.0%
Honduras		1			22	19	6	11	19	78	0.8%
Italy			5	1	2	2			0	10	0.1%
Japan								1	1	2	0.0%
Kenya			4			2			0	6	0.1%
Korea			3	1	1	1	6	12	2	26	0.3%
Kyrgyzstan		2	5		23	3	30	15	10	88	0.9%
Laos							3		0	3	0.0%
Liberia									3	3	0.0%
Mali						1			0	1	0.0%
Mauritania					1		2		0	3	0.0%
Morocco				4					0	4	0.0%
Nepal				2					1	3	0.0%
Okinawa		1			1	1	1	2	0	6	0.1%
Pakistan	1	2	38			1	2		0	44	0.4%
Peru						1			0	1	0.0%
Philippines					2	2	1		3	8	0.1%
Senegal						1	2		0	3	0.0%
Spain						1			0	1	0.0%
Thailand						1	4		1	6	0.1%
Turkey		2	6		1				0	15	0.1%
Turkmenistant						1			0	1	0.0%
Ukraine								1	0	1	0.0%
United Arab Emirates			1	6	12	14	17	1	0	51	0.5%
United Kingdom (England)									2	2	0.0%
Yemen								1	0	1	0.0%
Not Stated / Other	19	9	4	1				2	0	35	0.3%
Total	331	731	903	1,054	1,459	1,653	1,654	1,819	597	10,201	

Detailed Summary - Patient Branch of Service

	Patient Branch										% Consults
	2004 Total	2005 Total	2006 Total	2007 Totals	2008 Totals	2009 Totals	2010 Totals	2011 Totals	2012 Totals	Program Totals	Program
Air Force	11	62	85	95	142	96	124	105	30	750	7.4%
Army	252	405	431	539	751	888	905	1054	306	5,531	54.2%
Coast Guard						5	7	4	1	17	0.2%
Marine Corps	8	101	78	149	212	178	174	119	50	1,069	10.5%
Navy	18	8	37	30	71	191	161	218	106	840	8.2%
Contractor	6	27	30	24	40	36	56	47	22	288	2.8%
Detainee	3	13	23	33	15	27	14	2	0	131	1.3%
Non-Combatant	13	43	130	87	150	121	132	140	27	842	8.3%
Other	1	27	38	45	36	51	30	49	24	301	3.0%
Not Stated/NA	19	45	51	52	42	60	51	81	31	432	4.2%
Total	331	731	903	1,054	1,459	1,653	1,654	1,819	597	10,201	

Leishmaniasis

Tinea Corporis with ID Reaction

Program Summary by US Navy Afloat

US Navy Float		
Specialty	Number	%
Orthopedics	209	28.1%
Dermatology	172	23.1%
Ophthalmology	55	7.4%
Urology*	52	7.0%
Cardiology	36	4.8%
Neurology*	35	4.7%
Internal Medicine	31	4.2%
Infectious Diseases	28	3.8%
Otolaryngology	25	3.4%
Rheumatology	12	1.6%
Psychiatry	11	1.5%
Allergy	9	1.2%
Nephrology	7	0.9%
OB-GYN	6	0.8%
Pulmonary	6	0.8%
Radiology	6	0.8%
Gastroenterology	5	0.7%
General Surgery	5	0.7%
Neuro-Surgery	5	0.7%
Burn-Trauma	4	0.5%
Dental	4	0.5%
Hematology	4	0.5%
Endocrinology	3	0.4%
Traumatic Brain Injury	3	0.4%
Plastic Surgery	2	0.3%
Preventive Medicine	2	0.3%
Sleep Medicine	2	0.3%
Flight Medicine	1	0.1%
Pathology	1	0.1%
Pediatrics	1	0.1%
Toxicology	1	0.1%
Vascular Surgery	1	0.1%
Total	744	

Ship	
USS Abraham Lincoln	USS John C. Stennis
USS Arden	USS John F. Kennedy
USS Bataan	USS John Paul Jones
USS Benfold	USS Kauffman
USS Blue Ridge	USS Kearsarge
USS Bonhomme-Richard	USS Kitty Hawk
USS Boxer	USS Klakring
USS Bunker Hill	USS Leyte Gulf
USS Cape St George	USS Mason
USS Carl Vinson	USS Mitscher
USS Cleveland	USS Monterey
USS Comfort	USS Nashville
USS Comstock	USS New Orleans
USS Dubuque	USS Nitze
USS Denver	USS Pearl Harbor
USS Dwight D. Eisenhower	USS Ponce
USS Enterprise	USS Preble
USS Essex	USS Ronald Reagan
USS Fitzgerald	USS Rushmore
USS Gary	USS Russell
USS George H.W. Bush	USS Samuel Roberts
USS Germantown	USS San Antonio
USS Green Bay	USS Taylor
USS Gridley	USS The Sullivans
USS Guston Hall	USS Theodore Roosevelt
USS Harpers Ferry	USS Truman
USS Ingraham	USS Wasp
USS Iwo Jima	USS Whidbey Island

*** Includes specialties that were initially
 labeled as "Other Specialties"**

How To Send A Consult

- **Patient History**

  ➤ **When did it start? Days? Weeks? Months? Years?**

  ➤ **Patient symptoms now?**

  ➤ **Chronicity: Getting better? Worse? Staying the same? Spreading?**

  ➤ **What was used to previously treat the patient?**

  Cellulitis

  ➤ **Effectiveness of previous treatment?**

  ➤ **Laboratory tests results (if any)?**
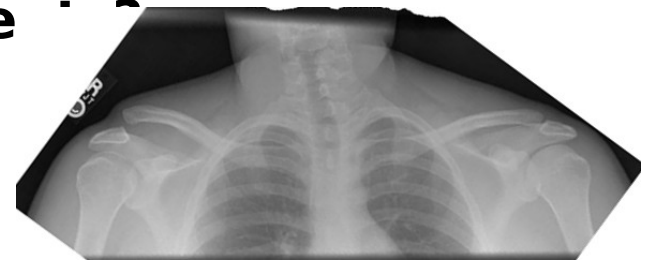
  ➤ **Your Dx / DDx**

  Grade III Separation

  ➤ **Limitations you have in managing the patient such as medications, procedures, laboratory tests, etc**

How To Send A Consult

- Patient Demographics: branch of service, age, and gender.
  If not U.S. military state their nationality. Identify if contractor detainee, foreign military, etc.

- Include digital images if appropriate

  - Use the jpeg format for images
  - Check images before transmitting
  - Usually 3 to 5 images is all we need
  - When in doubt, overload us with images

- Other attachments:

  - PDFs of EKGs
  - JPEGs of radiographs
  - Copies of laboratory and pathology re
  - Do not send DICOM images
  - Do not send photos in RAW format

2
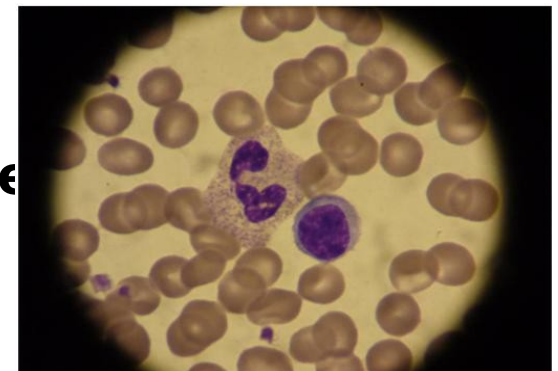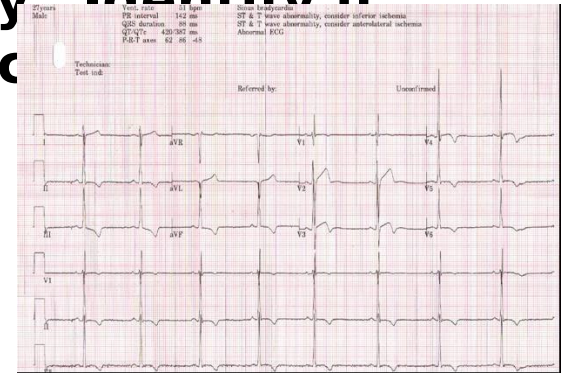
How To Send A Consult

- Do not include any patient identifying information
  - ➢ **Do not include the patient's name or SSN**

- Try to limit one patient per teleconsultation

- If you send a consult and later need additional assistance send the
  teleconsultation to the generic email address of the specialty and
  not to the consultant who answered your consult

  - ➢ Most consultants are on a call-roster and look consults during the period they are on-call

  - ➢ Most delete the consult after they have answ

  - ➢ Consult Manager makes an MSWord file for e consult

  - ➢ When a reconsult is sent, the Consult Manager transmits the file to the on-call consultant

Boxer's Fracture

How To Send A Consult

- Each teleconsultation group has a large number of consultants
  who monitor the email

- It is common for you to receive an "Out-of-Office" or a "Full Inbox" reply from one or two consultants

- If the entire email comes back to you as "Undeliverable"
  email the project admin
  ld.ar

Hobnail Hemangioma

Vaccine Reaction
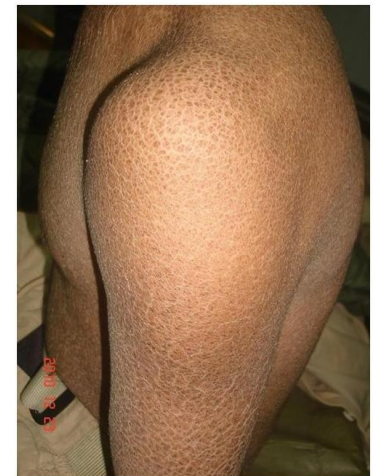
X-Linked Ichythosis

Problems

- **Problem**

  ➤ **Army provider does not inform their Information Management
      Directorate they are deploying**

    ✓ **Provider uses their AKO email address**

    ✓ **Consultant replies to the AKO address**

      ❑ **Outlook directs the reply to the MTF email address**

      ❑ **Deployed provider is not** ~~monitoring and does~~ **not
          receive the recommendation**

      ❑ **~10 to 15% of all consultations from Army providers**

- **Solution**

john.doe99@amedd.army.mil
Not john.doe99@us.army.mil

Problems

- **Problem**

  ➢ **Provider does not "uncheck" the automatic forwarding feature of their AKO account**

  ✓ **Consultant's recommendation is routed to providers AKO account which is forwarded another military email account**

  ✓ **If the other account is active (amedd.army.mil) then the consultant cannot contact the deployed provider**

- **Solution**

  Scalding Water

  ➢ **Consult Manager locates another provider same area and asks them to forward the consultant's recommendation, inform the original provider**

Problems

- **Problem**

  ➢ **MTF blocks email because it exceeds size limitation**

    ✓ **Size limitations varies greatly from 5 to 60+**

  ➢ **Providers have hard time uploading images > 2 h**

- **Solutions**

  ➢ **Instruct the provider how to set t camera resolution to 1 or 2 mB**

  ➢ **Instruct the provider how to use Picture Manager to compress ir**

  ➢ **Consult Manager compresses larg images and retransmits**
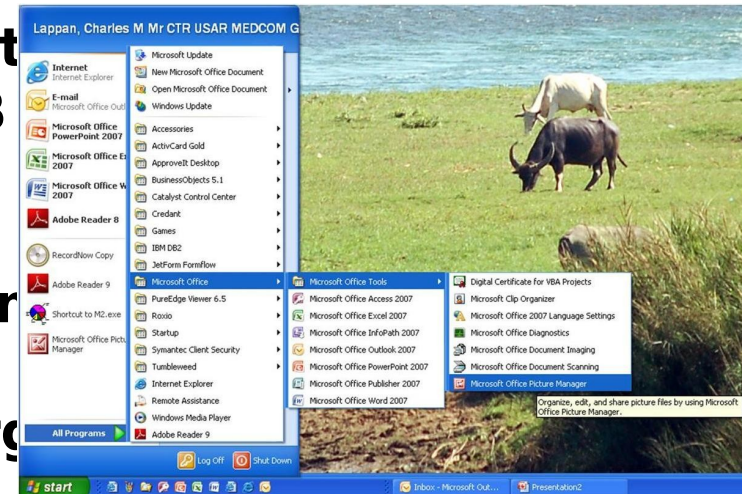
Problems

- **Problem**

  ➤ **Provider submits digital photographs which are out of focus and / or "inadequate for a diagnosis"**

  - **Solution**

  ➤ **Consultant either provides a recommendation based on the patient history or asks for new images**

  ➤ **Consultant or Consult Manager emails the referring provider suggestions on how to take better images**

Original Image   **Use the flower**   **Retransmitted Image**

icon for the macro setting

Verruca vulgaris

Everything

You Need To Know

About Digital Photography

For the Teleconsultation Program

In 7 Slides

Digital Cameras

- Equipment
  - PC with USB port
  - Internet access
  - Image Viewing/ Management Software
    - Microsoft Picture Manager
      - Loaded on all DoD issued computers
  - Cell phones cameras ok if they have **good** optics

- Recommended Camera Features
  - Rugged … can take the weather
  - Image Stablization
  - Speed of Operation
  - Aperture F2.8 or better
  - ISO 1600 or better

I-Pod Touch

Dx: Leishmaniasis

3.85 mm
F 2.4
1/30th Second
Pattern Metering

Apple iPhone 4

Dx: Plantar Warts

Focal Length: 3.85 mm
F: 2.8
1/15th Second
Pattern Metering

Digital Cameras

- DoD USB Prohibition

  ➢ Prohibits direct up-load of images from camera via USB cable /card reader

  ➢ **Approved solution** – upload images to a non-network PC
    - ✓ Copy to Compact Disk and scan for malware
    - ✓ Attached CD to network computer and upload in

  ➢ Ask the local Commander / IT for an exception to po

  ➢ Deployed facilities may DoD compliant cameras / software

- **Problem**

  ➢ Some government desktop / laptop computers do not have the software to make a CD. If that happens contact your IT directorate
    to have it installed.

Camera Sites Online

- **Steve's Digicams: http://www.steves-digicams.com**
  - For reviews of the best cameras click "The Best Cameras"

- **Ken Rockwell: http://www.kenrockwell.com**
  - Click "Technical" for many excellent how-to articles

- **Popular Photography: http://popphoto.com**
  - Excellent articles, product reviews and tons of tutorials

- **Adorama: http://www.adorama.com and adorama.com/alc/category/AdoramaTV**
  - Excellent digital photography resource center

- **Tech Radar: http:www.techradar.com**
  - United Kingdom website ... excellent camera reviews
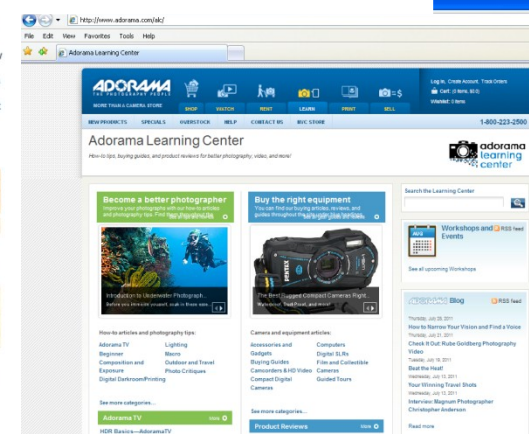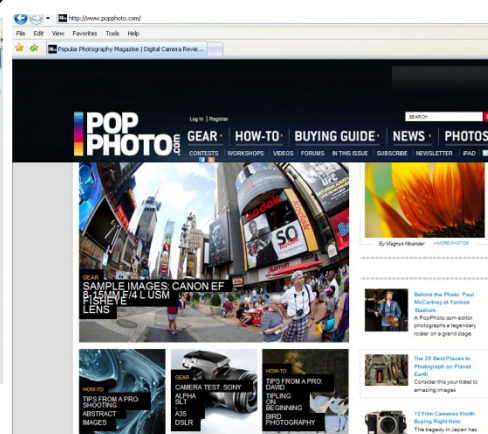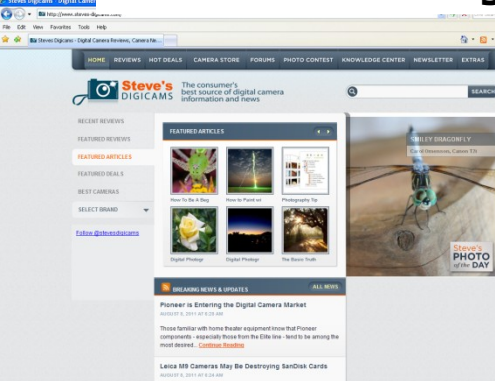
These are just a few of the available websites. Compare the reviews from several before purchasing. Check "User Reviews" to see what others have experienced with the camera.

Recent Trends

- Higher ISO --- faster sensitivity for low light and stop action
- Wider Aperture --- F1.4 to F2.8
  - ➢ The smaller the number the wider the aperture (lens opening)
  - ➢ Best for low light and no flash situations
- More pixels per sensor … 16 mP is becoming the new norm … many with 24 to 36 mP
- Image Stabilization / Vibration Reduction
- High definition movies with stereo sound
- In-camera High Dynamic Range (HDR) photography
- Rugged all-weather (Life Style) cameras
- More manufacturers
- Electronic Viewfinder Interchangeable Lens (mirrorless) camera
- Better images with Phone Cameras

New and Future Trends

- Better lens for EVIL / MFT / ILC cameras
- Higher resolving sensors with less noise, faster data readout
- Camera to cell phone communication

Setting Up the Camera – Image Size

- Go to Set Up menu … may be called "Image Size"

- Adjust for 1024 x 750 or closest possible setting

Fujifilm Finepix F600 EXR
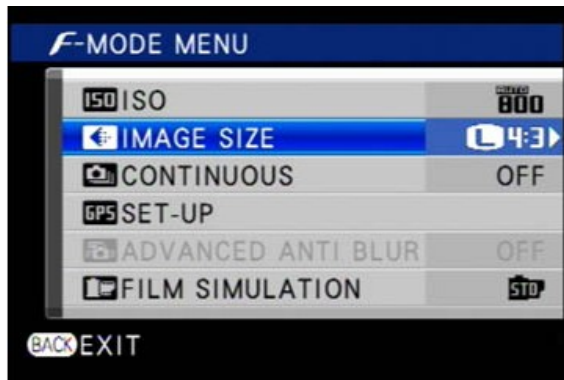
Olympus SZ-10
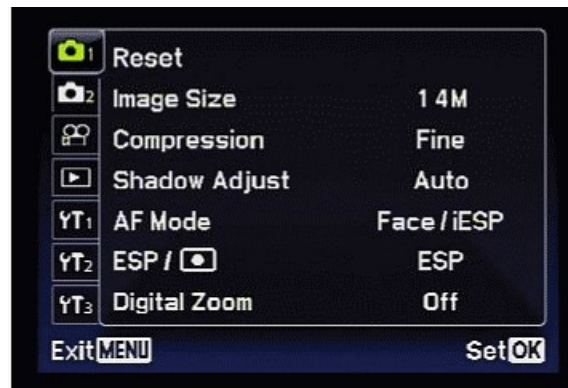
Rioch GR Digital IV
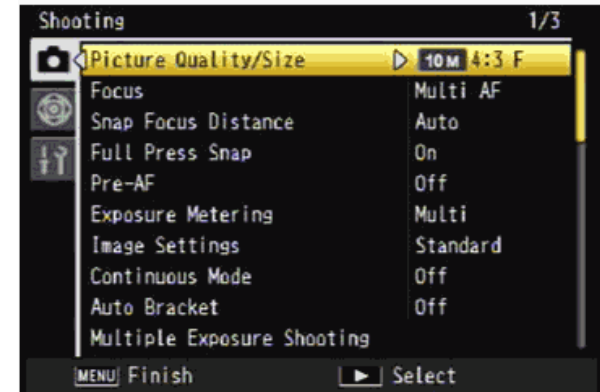
Images taken from http://www.steves-digicams.com

Setting Up the Camera – Macro Settings

Canon PowerShot SD880 IS Canon PowerShot S100

**Seborrheic Keratosis
Deployed Provider - Afghanistan**

**5 mm   F: 2.8 Pattern No Flash
1/8th Second Shutter Speed**

Nikon Coolpix P500

**Images taken from:
http://www.steves-digicams.com**

Canon PowerShot G12
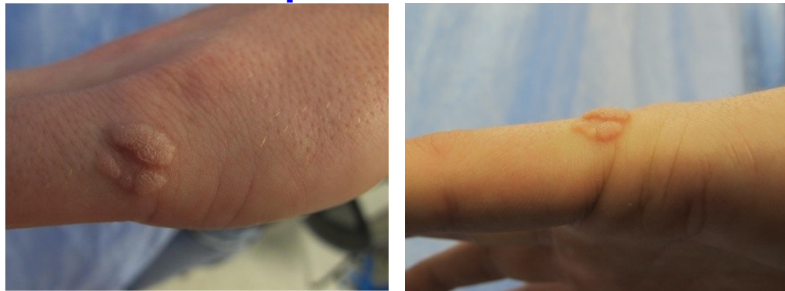
**Wart
CONUS Telederm Program
6.1 mm   F: 4.0 Pattern No Flash
1/60h Second, -1.33 Exposure Compensation**

Canon uses the letters "IS" to indicate the camera uses Image Stabilization

- **Macro setting for a close-up**

- **Look for the "flower" icon**

- **For some point and shoot cameras
 go into the "Scene" mode or**

3

Focus Lock Technique

- Center the object in the LCD view finder
- Press the shutter button half way down and hold it
- If the camera has a dot, square or brackets in the LCD display it may change

  from Red to Green when the camera thinks the image is in focus
- With the image in focus press the shutter button all the way

  down in a smooth motion ... do not jerk the camera ... do not take your finger

  off the shutter button until you hear the aperture complete its cycle

Canon PowerShot SD 790 IS

Pattern Metering
1/60th Second
6.2 mm
F 8.0

Dx: Contact Dermatitis
v Arthropod Assault
v Herpes Simplex Virus

Do not aim here

In Focus

[ ]

[ ]

Aim Here

Not in Focus

? Questions ?

April 7, 2012, Peace Rose in Bloom, Author's Garden
kon D50 with Nikkor 16-35 mm lens, Manual Focus, Aperture Priority, 17 mm, F2.8, 1/2000th Sec, Center Weight Average Metering, -0.67 Exposure Compensation
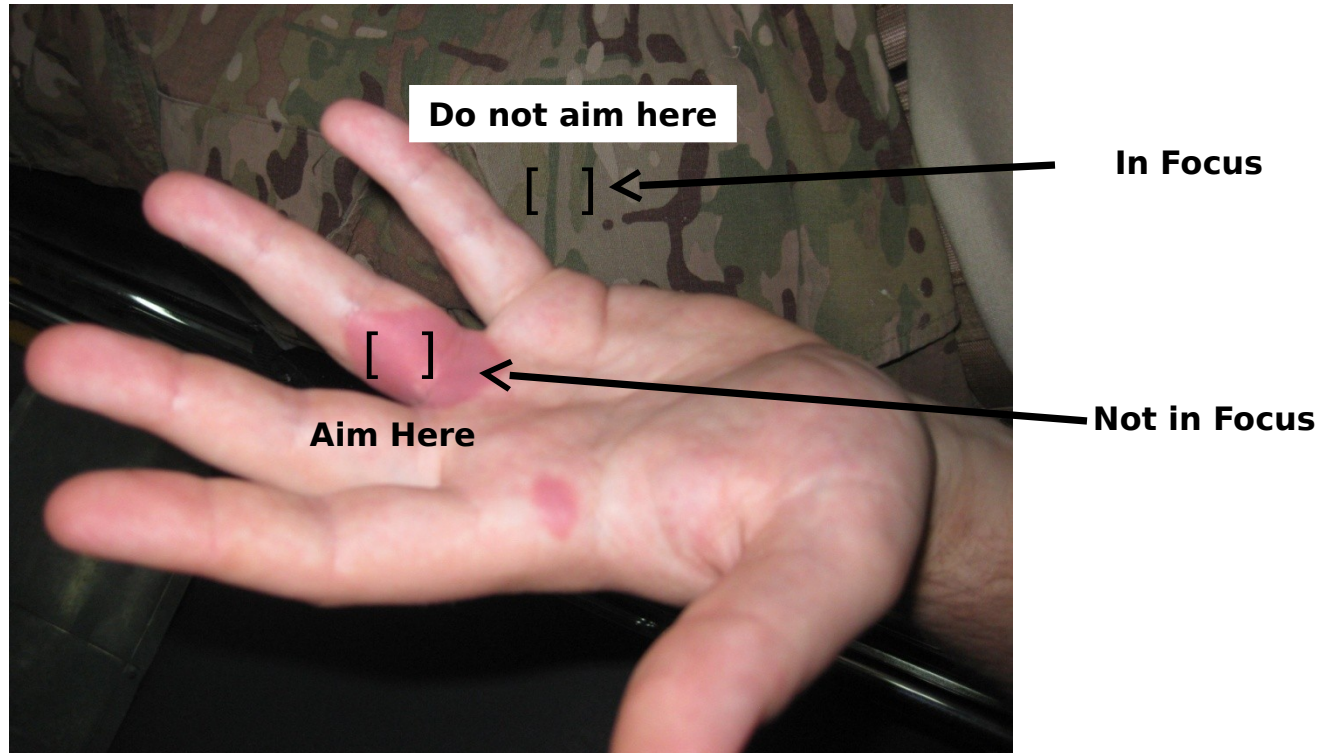
Addendum

October 29, 2011 Randolph AFB Air Show
Nikon D50 with Nikkor 18-300 mm lens, Shutter Priority, 300 mm, F18, 1/200th Sec, Spot Metering, Burst Mode, +1.0 Exposure Compensation

3

Camera Techniques

Cameras
Manufacturer's Anti-Shake Abbreviations

- **Canon : IS (Image Stabilization)**

- **Casio: Anti-Shake**

- **Nikon: VR (Vibration Reduction)**

- **Sony: Optical SteadyShot (for com cameras), SuperSteadyShot (SSS for DSLRs)**

- **Panasonic & Leica: MegaOIS**

- **Tamron: VC (Vibration Compensatio**

- **Pentax: SR (Shake Reduction)**

- **Sigma: OS (Optical Stabilization)**

**Image Stabilization Units
Canon Lenses**

http://popphoto.com

4

Close-up – Advanced Technique
(for cameras with an "Aperture Priority" setting)

This is the manual version of the Macro setting

Turn the flash to the "Off" position

➢ By turning off the flash you avoid the white-out of the flash

➢ Ensure the skin area has sufficient indirect lighting

Rotate selector switch to "A" (Aperture Priority)

Set the aperture to the biggest opening (lowest number)

Bring camera close to subject

Press the shutter button half way down and allow the camera to focu

When the image is in focus fully press the shutter button

- **Non- DSL Cameras**

  - ➢ **Set the camera to the fully automatic (point and shoot) mode**

  - ➢ **Use the rear LCD display for focusing**

  - ➢ **Place the camera over the eye-piece**

  - ➢ **Get as much of the slide area in the LCD as possible**

    - ✓ **Move the camera around and back and forth**

  - ➢ **Press the shutter button half way down and hold**

  - ➢ **When the image is clearly focused fully press the shutter button**

Epithelial Cells (Sputum)
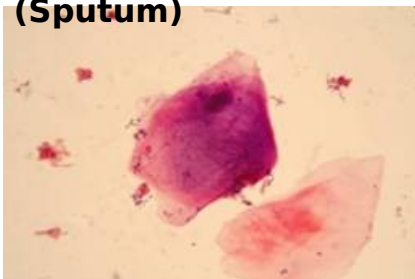
Image Properties
Nikon D50
F-5
38 mm
1/5th Sec
Pattern
EV: -1.0

Bacillus bacteria

Image Properties
Canon Powershot SD750
F-4.5
14 mm
1/8th Sec
Pattern
EV: 0.0

Gram Negative Bacillus
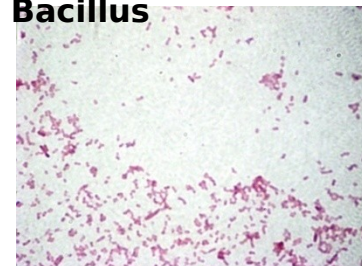
Image Properties
Sony DSC-S650
F-4.8
17 mm
1/40th Sec
Pattern
EV: 0.0

A Short Primer

Using Microsoft Paint

To Make JPEGS

From Radiographs

Saving X-rays As JPEGs Using Microsoft Paint

This section shows you how to use Microsoft Paint to take an X-ray or other radiograph on your computer and convert it to a "jpeg" or "Joint Photographic Experts Group" format using Microsoft Office 2007

**If your military computer has Microsoft Office Suites most likely you have Microsoft Paint.**

The screenshots in this presentation are from the author's desktop computer.

For this illustration I had to take the jpeg of a previously sent X-ray to our teleconsultation program. On your computer you will retrieve the image from your radiology program

Pull up the radiograph on your computer


monitor
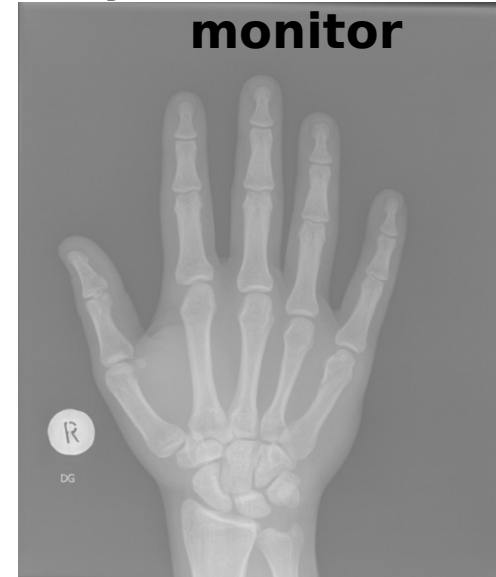
Pull up Microsoft Paint
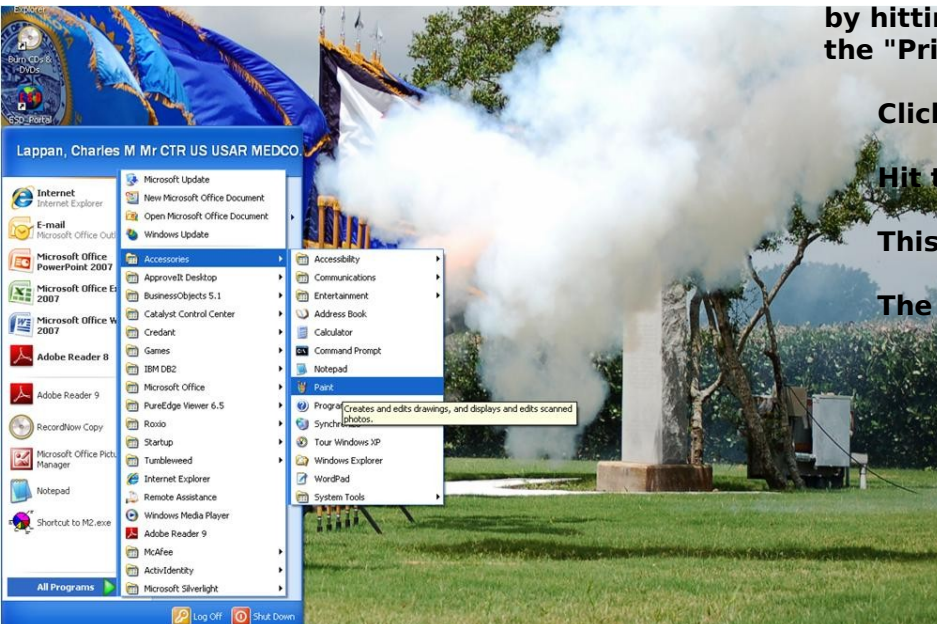
Place the radiograph into your computer's temporary memory by hitting the "Control" key (bottom row of your keyboard) and the "Print Screen" key (top row of the keyboard ... 3rd key from the right

Click on the Paint program (it should be in your system tray)

Hit these two keys at the same time: "Control" key and the letter "V"

This is the shortcut for "Paste"

The image now appears in the Paint Program

4
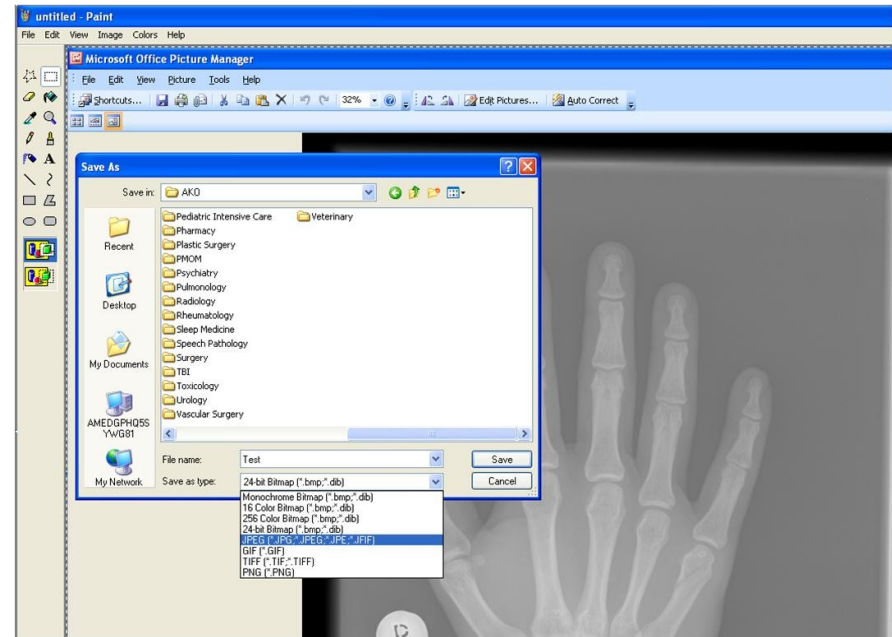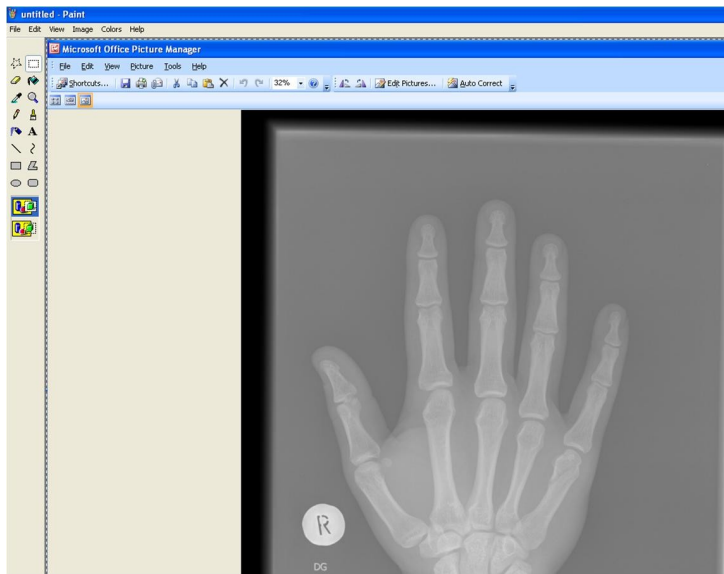
To save the X-ray as a jpeg in the Paint Menu

- Click "File"

- Click "Save As"

- The "Save As" box will open

  - In the "Save In" box select the location where you will save the file

  - Give the X-ray a new name in the "File Name"

  - For the "Save as type" select "JPEG"

The image size is small but it should be acceptable for orthopedics to make a diagnosis

Image Compression Using Picture Manager

- Use Microsoft "Picture Manager" to reduce images if you forgot to set the
  camera resolution to a smaller

  - ➢ **Click the Start button**

    - ✓ **All Programs**

    - ✓ **Microsoft Office**

    - ✓ **Microsoft Office Tools**

    - ✓ **Microsoft Picture Manager**